

# FUN WITH PIZZA FRACTIONS

## **INTRODUCTION**

Pizza for everyone! Fun With Pizza Fractions succeeds in making learning fractions fun! Includes 7 games to challenge and expand your knowledge of fractions. Most of the games have an alternate game play suggestion to reinforce understanding and take learning fractions further.

## **GAME#1: THE BEST CHEF!**

2-4 players

**Skill:** Making a whole, adding fractions to a whole

**Object of the game:** To be the player who makes the most whole pizzas!

### **Set Up**

1. This game does not require a spinner.
2. Place all the fraction pieces in one large center pile, fraction-side up.

### **Playing the Game**

1. Take turns collecting pieces of pizza one at a time in a clockwise direction.
2. Choose the piece that you think will fit into one of the whole pizzas that you are making.
3. The whole pizzas do not have to be of the same topping.
4. You may trade pieces between your own pizzas.
5. The game ends when all pieces are taken from the center and you make as many pizzas as possible with the fraction pieces you have collected.
6. The player who has the most whole pizzas wins.

### **Special Notes**

1. You may build more than one pizza at a time, but be careful—you might get caught with a pizza that can't be finished.



2. By choosing certain pieces you may be able to stop your opponent from completing a whole pizza.
3. If there is a tie, the winner is the one who is the closest to finishing a whole additional pizza.
4. For a challenge, play this game with the pieces fraction-side down.

### **Alternate Game Play**

Play this game as a race!

1. Toss all the pieces of pizza into a center pile.
2. Players race to build their pizzas at the same time.
3. You must build as you go and only grab one piece at a time.
4. The player who has the most whole pizzas built at the end wins.

## ***GAME#2: ONLY PEPPERONI PLEASE!***

2-4 players

**Skill:** Making a whole, adding fractions to a whole

**Object of the game:** To be the first player to build a whole, one-ingredient pizza.

### **Set-up**

1. Use game #2 spinner.
2. Place all the fraction pieces in one large center pile, fraction-side down.
3. Call out the pizza topping that you are going to build; either Pepperoni, Green Pepper, Olive, or Mushroom. (Each player should choose a different topping.)

### **Playing the Game**

1. Spin and collect the piece of your topping for the fraction value you spun.
2. Check to see if you chose the correct size piece by turning it over.
3. If you picked the correct size piece, you may keep it and start building your pizza.
4. If you did not pick the correct size piece, return it to the center pile.
5. If there are no pieces left for the fraction you spun, your turn ends.
6. Take turns spinning and collecting pieces. The first player to build exactly a whole pizza wins.

### **Special Notes**

1. The "everything" topping pieces are wild and can be used for your whole pizza. However, if one of your topping pieces is available it must be used first.
2. In order to win, your pizza must equal exactly one whole pizza—no more, and no less. Use a piece of paper to add up the fractions you used to make sure your pizza equals exactly one whole.

### **The spinner**

- If you spin TRADE, you may choose to trade one of your pieces for any piece that you need out of the center pile.

### **Alternate Game Play**

For an easier game, start with all the pieces fraction-side up in the center pile.

## ***GAME #3: HALF PEPPERONI, HALF MUSHROOM!***

2-4 players

**Skill:** Making  $\frac{1}{2}$ , adding fractions to  $\frac{1}{2}$

**Object of the game:** To be the first player to build 3 half pizzas using the same topping for each half pizza.

### **Set-up**

1. Use game #3 spinner.
2. Remove all of the  $\frac{1}{3}$  and  $\frac{1}{10}$  pieces and set them aside. (You will not need these pieces for this game.)
3. Place the remaining pieces in one large center pile, fraction-side down.

### **Playing the Game**

1. Spin and collect the piece for the fraction value you spun.
2. Check to see if you chose the correct size piece by turning it over.
3. If you picked the correct size piece, you may keep it and start building one of your half pizzas.
4. If you did not pick the correct size piece, return it to the center pile.
5. If there are no pieces left for the fraction you spun, your turn ends.
6. Take turns spinning and collecting pieces. The first player to build 3 one topping, half pizzas wins.

### **Special notes**

1. You do not have to have the same topping for all 3 of your half pizzas.
2. The "everything" topping pieces are wild and can be used in any of your pizzas, but if a regular topping piece is available it must be used first.
3. In order to win, each half pizza must equal exactly  $\frac{1}{2}$ —no more, and no less. Use a piece of paper to add up the fractions you used to make sure each of your pizzas equal exactly  $\frac{1}{2}$ .

### **The spinner**

- If you spin LOSE, choose one of your pieces to return to the center pile.
- If you spin FREE, choose any piece from the center pile.

### **Alternate game play**

For an easier game, start with all the pieces fraction-side up in the center pile.

## ***GAME #4: SLICE IT UP FOR MORE!***

2-4 players

**Skill:** Equivalencies

**Object of the game:** To be the player to earn 10 points by trading equivalent fraction pieces.

### **Set up**

1. Use game #4 spinner.
2. Put two  $\frac{1}{2}$  pieces together to form a whole pizza, fraction-side up, and place it in the center.

3. Remove all the other  $\frac{1}{2}$  pieces and set them aside. (You will not need them for this game.)
4. Sort the remaining pieces into piles by size with the fraction-side up.
5. You will need a piece of paper and a pencil to keep score.

### Playing the Game

1. Spin and collect the piece for the fraction value you spun.
2. Once you have enough pieces to equal an equivalent fraction to any piece in the middle pizza, replace that piece of the center pizza with the equivalent pieces instead of spinning.  
(For example, you have one  $\frac{1}{4}$  piece and two  $\frac{1}{8}$  pieces. On your next turn, you may replace the  $\frac{1}{2}$  piece of the whole pizza with your one  $\frac{1}{4}$  piece and two  $\frac{1}{8}$  pieces.)
3. Scoring: When you replace pieces with the center pizza you receive 1 point for every piece you put in.  
(For example, you replaced one  $\frac{1}{2}$  piece with one  $\frac{1}{4}$  piece and two  $\frac{1}{8}$  pieces for a total of 3 pieces traded. Therefore, you would receive 3 points.)
4. Game play continues until one player reaches 10 points.

### Special notes

1. Pieces that are replaced can be either larger or smaller as long as they are equivalent.  
(For example, you can replace a  $\frac{1}{2}$  piece with two  $\frac{1}{4}$  pieces or you can replace two  $\frac{1}{4}$  pieces with a  $\frac{1}{2}$  piece.)
2. Be sure pieces you trade are in fact equivalent. Use a piece of paper and pencil to check your answers.

### The spinner

- If you spin FREE, choose any piece from the center pile.

### Alternate game play

For a shorter or longer game, simply adjust the total points needed to win.

## ***GAME #5: WHO CAN EAT THE MOST?***

2-4 players

**Skill:** Reducing Fractions

**Object of the game:** To be the player to collect the most pieces by reducing and finding equivalent fractions.

### Set up

1. Use game #5 spinner.
2. Sort the remaining pieces into piles by size with the fraction-side up.

### Playing the Game

1. Spin and reduce the fraction you spun to one of the pizza fraction values. Say the equivalent fraction aloud.

2. If you answered correctly, take a piece with that value.
3. If you answer incorrectly, do not take a piece.
4. If there are no pieces left for what you spun, try using a combination of equivalent pieces to make up your reduced fraction. (For example, you reduced the fraction  $\frac{2}{4}$  to  $\frac{1}{2}$ . There are no  $\frac{1}{2}$  pieces left, so you may take two  $\frac{1}{4}$  pieces or another combination equal to  $\frac{1}{2}$ .)
5. If there are still no pieces available for you to take, your turn ends.
6. Play continues until all the pieces have been collected.
7. The player who collects the most pieces wins!

### Special notes

1. In addition to spinning, if you can create exactly a whole pizza with your fraction pieces you have collected, you may take any piece as a bonus on your next turn. (The whole pizza does not have to be the same topping, but it must equal exactly one whole.) This may be done only once per pizza.
2. Each fraction on the spinner can be reduced to one of the pizza slices' values. You may use a piece of paper to help you.
3. Another player should check to see if your answer is correct. Use a piece of paper and pencil to check or use the equivalency table on the back page of this guide.

### The spinner

- If you spin TAKE 2, take 2 pieces if you answered correctly.
- If you spin FREE, choose any piece from the center piles.

### Alternate game play

For a more difficult game, start with all the pieces fraction side down.

## GAME #6: PIZZA THIEF?

2-4 players

**Skill:** Equivalencies

**Object of the game:** To be the only player left with pieces remaining in your GAME PLAY PIZZA\*!

*Please be sure to read through all instructions before beginning.*

### Set up

1. Use game #6 spinner.
2. Choose one  $\frac{1}{2}$  piece for your GAME PLAY PIZZA\* and set it in front of you.
3. Put the remaining  $\frac{1}{2}$  pieces off to the side, these will not be used in the game.
4. Sort the remaining pieces into piles by size with the fraction side up.

**\*Please Note:** *Game Play Pizza* is referred to throughout the instructions. This is the  $\frac{1}{2}$  pizza that you start with and your opponents are trying to take away. The pieces that you collect when you spin do not become a part of your *Game Play Pizza*. Once your *Game Play Pizza* is gone completely, even if you have pieces left in your hand that you have collected from spinning, you are out of the game.

## Playing the Game

1. Spin and collect the piece for the fraction value you spun. Hold this piece in your hand with the fraction side facing you.
2. Continue collecting pieces in this way until you have enough pieces collected to make  $\frac{1}{2}$  of a pizza  
(For example, one  $\frac{1}{4}$  piece and two  $\frac{1}{8}$  pieces).
3. Once you have collected enough pieces to equal  $\frac{1}{2}$  on your next turn, instead of spinning, you may replace any opponent's GAME PLAY PIZZA with the pieces from your hand.  
(In our example, your opponent will now have one  $\frac{1}{4}$  piece and two  $\frac{1}{8}$  pieces for their GAME PLAY PIZZA.)
4. Your opponent's  $\frac{1}{2}$  piece that is replaced should be discarded to the side. It will not be used again.
5. After this is done, other players may use the pieces in their hands to take away an equivalent piece from your opponent's GAME PLAY PIZZA or to remove a SAFETY piece instead of spinning.  
(SAFETY pieces must be removed first before pieces in the GAME PLAY PIZZA may be removed.)  
To do this:
  - Pieces taken away must either be the same or equivalent fractions. (For example, your  $\frac{1}{4}$  piece for your opponent's  $\frac{1}{4}$  piece, or your  $\frac{1}{4}$  piece for two of your opponent's  $\frac{1}{8}$  pieces.)
  - Both your opponent's piece(s) and your piece(s) are then returned to the center piles.
  - Your opponent will now have less than  $\frac{1}{2}$  of their pizza left.
6. If you do not have a piece in your hand that can be used to remove one of your opponent's pieces, spin and collect a piece. Your turn is now over, even if the piece you collected can be played.
7. Play continues until only one player has pieces left in their GAME PLAY PIZZA. This player wins the game!

## Special notes

1. All pieces that are taken away from a GAME PLAY PIZZA, should be returned to the center piles, except for the  $\frac{1}{2}$  pieces (which are set aside).
2. The piece(s) you use to take away an opponent's piece should also be returned to the center piles.

## The spinner

- If you spin SAFETY, choose any fraction piece from the center and put it on top of your GAME PLAY PIZZA. This safety piece must be removed before the  $\frac{1}{2}$  slice can be divided or the piece that you place it on can be taken away. The safety piece may be any fraction value you choose.
- If you spin FREE, choose any piece from the center piles.

## GAME #7: EAT UP!

2-3 players

**Skill:** Finding Factors

**Object of the game:** To be the player to collect the most pieces by determining the factors of the denominator you spun.

### Set up

1. Use game #7 spinner.
2. Sort the remaining pieces into piles by size with the fraction-side up.

### Playing the Game

1. Spin to see which denominator you have to find the factors for.  
(The *denominator* in a fraction is the bottom number of the fraction. The *numerator* is the top number. A *factor* is a number that can be used to divide another number evenly with no remainder.)
2. Collect the fraction pieces whose denominators will divide evenly into the factor that you spun.  
(For example, if you spun the number 4 you would collect one  $\frac{1}{2}$  and one  $\frac{1}{4}$  piece because 4 can be divided evenly by both 2 and 4:  $4 \div 2 = 2$  and  $4 \div 4 = 1$ .)
3. Take one piece for each correct factor found, which means you may take more than one piece at a time. (As in our example, there were two pieces that you could take!) You may use a piece of paper to help you.
4. Have another player check your answers using a piece of paper and a pencil or by using the answer key located on the back page.
5. If there are no pieces left for what you spun, your turn ends.
6. The next player follows the same directions.
7. Play continues until all the pieces are taken.
8. The player who collects the most pieces wins!

### Special notes

Each factor on the spinner has at least one fraction piece in the center piles that can be taken.

### The spinner

- If you spin FREE, choose any piece from the center piles..

### Alternate game play

For a shorter game, decide on a number of pieces needed to collect to win the game.

## Equivalency Table for Game #5

(only fractions that are on the spinner are included, fractions on the spinner are bold):

$$2/4 = \frac{1}{2}$$

$$2/6 = \frac{1}{3}$$

$$2/16 = \frac{2}{8}$$

$$2/20 = \frac{1}{10}$$

$$3/12 = \frac{1}{4}$$

$$3/15 = \frac{1}{5}$$

$$3/18 = \frac{1}{6}$$

$$3/24 = \frac{1}{8}$$

$$3/36 = \frac{1}{12}$$

$$4/12 = \frac{1}{3}$$

$$4/24 = \frac{1}{6}$$

$$5/25 = \frac{1}{5}$$

$$8/16 = \frac{1}{2}$$

## Factor Key for Game #7

$$4 - \frac{1}{2}, \frac{1}{4}$$

$$8 - \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$$

$$9 - \frac{1}{3}$$

$$12 - \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{6}, \frac{1}{12}$$

$$24 - \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \frac{1}{12}$$

$$30 - \frac{1}{2}, \frac{1}{5}, \frac{1}{6}, \frac{1}{10}$$

$$40 - \frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{1}{8}, \frac{1}{10}$$

$$42 - \frac{1}{2}, \frac{1}{3}, \frac{1}{6}$$

$$56 - \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$$

$$100 - \frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{1}{10}$$

$$120 - \text{All pieces}$$



[www.learningresources.com](http://www.learningresources.com)



© Learning Resources, Inc., Vernon Hills, IL (U.S.A.)  
Learning Resources Ltd., King's Lynn, Norfolk (U.K.)  
Please retain our address for future reference.  
Made in China. LSP5061-SBF-GUD